PDR RID Report

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Document PDR Wrap-Up

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Priority 1	

Section CSMS PDR Summary **Page** MA-15 **Figure Table**

Category Name ESDIS System-Level **Actionee** HAIS

Sub Category

Subject Multicast Availability

Description of Problem or Suggestion:

I take exception to the statement that "multicast to ISTs is desirable but can be resolved later, since its impact on processor load is much less." The impact on FOS processor load is not the real issue here. The ESDIS Project has a commitment to support EOC compatibility Test (ECT) - 3 scheduled for end of CY 97 that requires IST connectivity to be available and tested by that time. "Later" must be defined to be consistent with external Interface commitments before this issue is considered resolved.

Originator's Recommendation

This issue is not only an ECS availability issue. ECS system personnel need to work with ESDIS Project personnel (both development and operations managers and SMO personnel) to assure external Interfaces and ESDIS Project commitments are met. (Note: Support of ECT-2 in spring 97 is highly desirable to permit/facilitate validation of instrument loads but is not currently a hard requirement).

GSFC Response by: **GSFC Response Date**

HAIS Response by: Suhrstedt **HAIS Schedule** 4/15/95

HAIS R. E. Armstrong/Moore **HAIS Response Date** 5/16/95

Full connectivity between the EOC and the ISTs will be available to support the EOC Compatibility Test-3 (ECT-3) test scheduled for late 1997.

Because many campuses do not yet contain multicast routers, the ability to unicast to selected ISTs is required. The impact on FOS of unicasting to ISTs during AM-1 has been evaluated. The evaluation considered the impact on FOS processors if they were used in an entirely unicast environment (i.e., with no multicasting whatsoever). The data revealed a worst-case Real-Time Server (RTS) or Data Server (DS) processor load of 22% CPU utilization on a Sun SPARC/20. (Note that since candidate systems being considered for the RTS and DS are more powerful that the SPARC/20, the impact on the actual servers will be smaller than 22%.) The impact on the network if only unicasting is used was also found to be minor. For AM-1, the worst case traffic appearing on the EOC LAN is 4.7 Mbps for unicast, compared to 3.6 Mbps for multicast. Since the EOC LAN contains a 100 Mbps FDDI ring, the extra 1 Mbps associated with unicast is not significant.

FOS software will use a communications API that will hide the details of the actual communications mechanism. Thus, the underlying communications mechanism by which the EOC and ISTs communicate may or may not be via IP multicasting. In either case, however, FOS software will have full functionality and will be able to satisfy all its AM-1 requirements. Also, the FOS software will be unaware of whether multicasting is performed or not; all the software must do is "send" its data and the API will perform the tasks necessary to send the data across the network. This allows FOS software to employ a single API, regardless of whether or not the IST is on a campus that can receive multicast packets. The API will provide all necessary hooks to the FOS applications to allow multicasting to ISTs, but the API will determine whether the IST is capable of receiving multicast packets. Thus, when the ISTs are capable of receiving multicast packets (e.g., when their campus has multicast capable routers) the API will automatically multicast to them -- no changes to the FOS applications will be required. Furthermore, the API is advantageous to ISTs because it allows any IST (whether multicast capable or not) to communicate with the EOC.

Status **Closed** **Date Closed** **7/17/95** **Sponsor** **Banks**

****** **Attachment if any** ******